

**John Dewey's Critique of Scientific Dogmatism in Education
with Implications for Current Supervisory Practice
within a Standards-based Environment**

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Abstract

Drawing on historical research, this paper draws attention to Dewey's oft-neglected, but no less brilliant work published in 1929, *The Sources of a Science of Education*. Dewey's critique of efforts in his day to seek "quick-fixes" to practical educational and curricular issues by employing premature scientific investigations and findings has relevance not only from a historical perspective, but can provide a lens from which to understand current supervisory practice common in many schools. The paper examines Dewey's work by examining the rise of efforts towards a "science of supervision" starting in the twenties and thirties, and continuing through the forties. Dewey and some others harshly criticized attempts to emphasize a definitive "science of education," paying little attention to the artistic side of the field, without mindful attention to the exigencies of scientific discovery. Efforts to quantify, categorize teaching practices in dogmatic ways were criticized by Dewey. Supervisors who tried to apply the "science of teaching" to a "science of supervision" were similarly criticized. Current standards-based supervisory practices (e.g., walk-throughs) can be viewed as another historical instance of the proclivity of some educators to apply arbitrary standards and unproven supervisory strategies. Through examination of Dewey's critique of scientific dogmatism in his day and use of oral history testimony from selected retired professors of supervision who can comment on scientific supervision at the time, this paper draws historical parallels to current supervisory practices. Interestingly, examining the state and eventual fate of scientific supervision in the last century may provide insights into the future of supervision.

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“When people place uncritical faith in scientific research methodologies to discover truth, and in rational discourse to articulate their vision of the good, they ultimately limit the intelligence and free will of the moral agent by denying the possible fallibility of scientific or rational method. Rationality, on this account, becomes a dogmatic caricature of science and logic. Rather than understanding them as tools to serve ends greater than themselves, . . . [they] are transformed into objects of worship and devotion. . . . When taken to an extreme, . . . [they] can become dogmatic . . .”

(Alexander, 2001, p. 135, basing his views on Michael Polanyi, 1964)

Introduction

Arguably, the most egregious deficiency in education, and particularly in regards to the field of supervision, is its ahistoricism (Alfonso & Firth, 1990; Bolin & Panaritis, 1992; Glanz, 1995; Pajak, 1993a). Educators, laypeople, policy makers, and other politicians often neglect to consider historical antecedents in promulgating and implementing ideas and programs. The past is viewed, at best, as an interesting exercise in nostalgia but with few lessons to inform and shape current practice. They eschew Ernst Cassirer’s (1953) astute observation that the past, present, and future form an “undifferentiated unity and an indiscriminate whole” (p. 8). Fredrich Kummel (1966) explains this notion of temporality as a historical process “in which the past never assumes a final shape, nor the future ever shuts its doors.” He continues, “Their essential interdependency also means, however, that there can be no progress without a retreat into the past in search of a deeper foundation” (p. 50). To think historically requires a realization that past generations might have encountered equally intractable problems and might have considered ways to confront these issues. To think historically encourages the art of reflection and, at the same time, demands forbearance. To think historically means to ask these, among other questions: “How have significant ideas, events, and people influenced or informed current practice?”; “How are our advocated theories and prevailing practices connected to the past?”; and “What might we learn from the past to shape current policy and practice?”

The current and continuous clarion cries for increased accountability, implementation of high stakes testing within a standards-driven educational environment, viewed historically, is not new, albeit its form and emphases might vary from past practices. The national movement towards standards-based education with its emphasis of raising standards and promoting uniformity of curricular offerings to raise academic achievement, for instance, has been a long established reform proposal (Seguel, 1966). Current efforts at establishing national or state standards have not been viewed within a historic context. We have not asked what can be learned from examining efforts by The Committee of Ten, of 1892, that sought to establish new curriculum standards for high school students so that all students would receive a high quality academic curriculum (Kliebard, 1987). Equally forgotten, is the establishment of the Commission on the

Reorganization of Secondary Education in 1918 that advocated a diversified curriculum making allowances for a variety of curriculum "tracks" for the varied abilities of students (Krug, 1964). Nor do we consider the development and impact of the College Entrance Examination Board (formed in the 1890s), the Scholastic Aptitude Test (the first SAT was administered in 1926), and the American College Testing Program (established in 1959) as guardians of standards applied to the academic curricula.

The passage of the National Defense Education Act (NDEA) which poured millions of dollars into mathematics, sciences, and engineering is similarly overlooked as an attempt to raise levels of student achievement and assessed by national standardized tests (Ravitch, 1995). Forgotten are the continually declining SAT scores and a host of social, economic, political and educational challenges in the 1960s and 1970s that precipitated the publication of the "A Nation at Risk: The Imperative for Educational Reform" report, by the National Commission on Excellence in Education (1983) in which attention was drawn to the assertion that schools had lowered their standards too much and that American students were not competitive with their international counterparts.

What about the spate of national and state reports that continued through the 1980s each advocating fundamental educational change (e.g., Carnegie Forum on Education and the Economy, 1986; the Holmes Report 1986)? We might recall though the Education Summit held in 1989 by then President George Bush and state governors. A year later, in his State of the Union Address, President Bush affirmed his commitment to excellence in education by establishing six national education goals to be achieved by the year 2000. Signed into law by Congress during the Clinton administration on March 31, 1994, "Goals 2000" proclaimed, in part, that by the year 2000 "U.S. students will be first in the world in science and mathematics achievement" and "Every school will be free of drugs and violence and will offer a disciplined environment conducive to learning."

What about the adoption of national goals as a major impetus for the increased attention to standards at the state level? In 1991, the U.S. Congress established the National Council on Educational Standards and Testing (NCEST) that encouraged educators and politicians to translate somewhat vague national goals into content curriculum standards. NCEST recommended that educators establish specific standards in specific subject areas. The National Council of Teachers of Mathematics (NCTM) led the way by publishing standards that quickly influenced textbook companies and testing agencies.

Continuing in the tradition of standards-based education, President George W. Bush signed into law the "No Child Left Behind (NCLB) Act of 2001," a reauthorization of the Elementary and Secondary Education Act Legislation of 1965, which we all know very well. Four basic principles were evident: stronger accountability for results, increased flexibility and local control, expanded options for parents, *and an emphasis on teaching methods that presumably have been proven to work.* [italics added]

The point is that those individuals and agencies currently involved in grappling with seemingly contentious and intractable problems and issues need to consider their proposals and resolutions as part of a historical continuum. To examine the past in a

nuanced, mindful, and reflective manner might reveal subtleties or approaches that have relevance and potency to shape current and future policy and practice. From another frame, such historical inquiry might unmask current efforts to address urgent problems as little more than failed or unproven nostrums. Extant proposals that rely on questionable practices of the past might not only serve to revisit past educational transgressions, but might exacerbate and sustain the very problems they meant to resolve.

This paper highlights a particular aspect of the latter goal of NCLB, as stated above, regarding the employment of educational methods that have “proven to work” (italicized above). The paper does not focus on specific curricular programs in reading, mathematics or the language arts, but it does imply the overall presumption that such programs are premised and founded on scientific grounds. More pointedly and fundamentally, the very nature of science as applied to education may need scrutiny. The specific analysis of this paper, however, focuses on supervisory practice that has mirrored, in many ways, more general developments described above in regards to education and curriculum (see, e.g., Glanz, 1992). Furthermore, although examination of science in relation to education and curriculum have been undertaken (see, e.g., Kliebard, 1987), little, if any, attention has been paid to this topic in the field of supervision. Therefore, the nature of scientific inquiry itself is examined in this paper in regards, specifically and narrowly, to supervisory theories and practices that have gained attention and legitimacy amidst the prevailing standards-based educational environment. Although the focus here is on the science of supervision the implications of such analyses for education and curriculum, specifically, are relevant. We will examine possible antecedents for present-day proclivities to implement supervisory programs and apply theories or practices that have not undergone empirical or scientific scrutiny. We will also point out that Dewey’s work may help us place current supervisory efforts in a sounder, more “scientific” frame.

Purposes

Not long ago, I reexamined the work of two important theorists (Robert Goldhammer and Jules Henry), the confluence of their ideas, and the implications of their work on the theory and practice of supervision (Glanz, 2007). Continuing this line of research interest, I reread John Dewey’s (1929) often neglected work titled *The Sources of a Science of Education*. This seventy-seven page essay is remarkable in several ways. First, it represents a concise yet strident critique of educational practice in the early decades of the twentieth century. Chastising educators who seek to apply preliminary yet unproven scientific findings to immediately solve urgent practical problems in schools, Dewey charts an intellectually cogent path for establishing a scientific base to education, teaching, and curriculum. A second reason why Dewey’s work is so important is because it influenced some educators in his day to address difficult problems facing schools. Ever increasing administrative and organizational demands of the newly established school bureaucracy necessitated, for instance, better means of facilities management, operational governance, curriculum development, and ensuring teacher quality. Educators looked to science to help provide some answers and guidelines for practice. Dewey’s admonitions

are intellectually engaging and historically relevant. Third, highlighting Dewey's arguments sheds light on a nearly forgotten period in American educational history, and serves as a guidepost to help current educators find an appropriate and reasonable balance between the art and science of teaching. And finally, Dewey's work can perhaps serve as an intellectual anchor to address current supervisory practices within the standards-based environment.

The research methodology employed in this paper is historical research with an emphasis on content analysis while examining Dewey's *The Sources of a Science of Education* (Krippendorff, 2004). Oral history testimonies (Seidman, 2006) were also conducted with four prominent professors of supervision. I employed semi-structured interviews because I know each of these scholars and thought such an approach would best facilitate dialogue. My goal was to enhance conversation giving both parties an opportunity to discuss ideas freely (Glesne & Peshkin, 1992). Interviews were not recorded, but extensive notes were taken as the researcher is an experienced interviewer. Each interviewee was given the final write-up of results to indicate content accuracy. Each scholar agreed that my comments were accurately recorded. I did not, however, have them indicate whether or not they agreed with my analysis and conclusions.

The Interview Protocol consisted of several questions geared toward eliciting paragraph length discourse about their background, experiences with supervision, knowledge of Dewey's ideas of the science of education, and thoughts about current practices of supervision in schools. Since the researcher knows each scholar well, a rapport was already established, and discussions flowed smoothly and cordially. Each scholar was appreciative and willing to share experiences and opinions. Content and consensual validity were obtained for the protocol. The Interview Protocol follows:

(After initial greetings and niceties... and describing my research project)

As I had mentioned to you, I would like to take notes and to use a tape recorder for this interview. Is that acceptable to you?

- 1) Can you please tell me, in as much detail as you would like, about your career in the field of supervision?
- 2) Is teaching an art or a science? Please explain.
- 3) Is supervision an art or a science? Please explain.
- 4) What are Dewey's arguments for establishing sources of science in education?
- 5) Can you please share your thoughts on the influence of Dewey's work on the science of education during his lifetime? Explain in detail please.
- 6) What is the historical significance of Dewey's work?

7) What was the advocated emphasis of supervision when you were a professor working at a university?

8) Can you comment on how supervision was practiced in schools at the time?

9) Are you familiar with supervisory walk-throughs, commonly employed in today's schools? Explain

10) How can Dewey's work inform current supervisory practices?

(At end....)

Thank you so much for your time. You've been very helpful. Would you mind if I call you next week if I think of anything else to ask you or to see if there is anything that you would like to add?

Thanks again.

These individuals were selected for interviews for two reasons: One, they are all over age 70, with one of them 90 years old. Having used oral histories in the past (see, e.g., Glanz, 2000), I wanted to hear from individuals in this field who could provide close-second hand knowledge of the era and times in relation to science and supervision. Although none of them personally knew Dewey, at least one of them heard him speak, but all were enormously influenced by his ideas as related to supervision. All of them knew other supervision scholars and practitioners who greatly influenced them as well. I tried to triangulate my sources because multiple sources are always more reliable than any single individual's perceptions and recollections (Denzin & Lincoln 1998; Merriam 1998). A second criterion in selecting these four individuals is their prominence in the supervision field given their publications, positions held, and affiliation with the Council of Professors of Instructional Supervision (COPIS), the most important organization in the field of supervision.

The following questions were addressed:

1. What are Dewey's arguments for establishing sources of science in education?
2. What is the historical significance of Dewey's work?
3. How did Dewey's work influence the supervision of instruction in the early decades of the twentieth century?
4. How can Dewey's work inform current supervisory practices?

Historical Perspective/Framework

There is no extant research in the field of supervision that examines this topic (i.e., supervision, John Dewey, and the science of supervision). Some authorities have tangentially addressed some of these issues (e.g., Tomlinson, 1997). A few dissertations

have as well (Arlington, 1972; Button, 1961; Glanz, 1977). These doctoral dissertations were general treatments but not in depth analyses (Glanz, 1998). What follows then is a historical perspective forming the core of the study. Interviews and implications follow.

Unprecedented growth precipitated by the industrial revolution characterized the second half of the 19th century. During this period, schoolmen, specifically superintendents, began shaping schools in large cities into organized networks. In the battle that ensued to reorganize the nation's schools, sources of authority and responsibility in education were permanently transformed (Tyack, 1974). By the end of the 19th century, reformers concerned with undermining inefficiency and corruption transformed schools into streamlined, central administrative bureaucracies with superintendents as supervisors in charge. Supervision, during this struggle, became an important tool by which the superintendent legitimized his existence in the school system (Glanz, 1991). Supervision, therefore, was a function that superintendents performed to oversee schools more efficiently.

Supervision can best be viewed as an inspectional function during this period. The practice of supervision by inspection was indeed compatible with the emerging bureaucratic school system with its assumption that expertise was concentrated in the upper echelons of the hierarchy. Many teachers perceived supervision as inspectional, rather than a helping or improvement function.

Numerous technological advances greatly influenced American education after 1900. As a result of the work of Frederick Winslow Taylor (1911), who published a book titled *The Principles of Scientific Management*, "efficiency" became the watchword of the day. Taylor's book stressed scientific management and efficiency in the workplace. The worker, according to Taylor, was merely a cog in the business machinery, and the main purpose of management was to promote the efficiency of the worker. Within a relatively short period of time, *Taylorism* and *efficiency* became household words and ultimately had a profound impact on administrative and supervisory practices in schools.

Franklin Bobbitt (1913), a professor at the University of Chicago, tried to apply the ideas that Taylor espoused to the "problems of educational management and supervision." Bobbitt firmly held that management, direction, and supervision of schools were necessary to achieve "organizational goals." Bobbitt maintained that supervision was an essential function "to coordinate school affairs.... Supervisory members must co-ordinate the labors of all, ... find the best methods of work, and enforce the use of these methods on the part of the workers" (pp. 76, 78). The employment of scientific principles in supervision, said Bobbitt, is a necessity for the continued progress of the school system. Many supervisors, including principals, were eager to adopt Bobbitt's ideas of scientific management for use in schools.

Just as "supervision as inspection" reflected the "emergence of bureaucracy" in education, so too "supervision as social efficiency" was largely influenced by scientific management in education. It is within this context that Dewey's work emerged.

The movement to alter supervisory theory and practice to more democratic and improvement foci, while at the same time minimizing the evaluative function, occurred in the 1920s as a direct result of growing opposition to autocratic supervisory methods. Influenced in large measure by Dewey's (1929) theories of democratic and scientific thinking as well as by Hoscic's (1920) ideas of democratic supervision, supervisors attempted to apply scientific methods and cooperative problem-solving approaches to educational problems (Pajak, 1993b). Dewey's work in particular served as the intellectual impetus to marshal opposition against emerging attempts to apply social efficiency to educational problems.

Examination of the literature indicates, however, that the momentum of social efficiency with its crude and ill-conceived application of science to solve educational problems gained rather than lessened as a result of Dewey's work. Although in the 1930s and 1940s educators believed that autocratic supervisory practices were no longer viable, they urged for more scientific approaches to supervisory practice in schools. In much earlier times, supervision was conducted by means of checklist-type rating cards. The early attempts to apply science via "rating cards" were now losing favor. Burton (1930), a prolific writer in supervision, explained that the use of "rating schemes from our pre-scientific days, . . . would be wholly inadequate today." Although Burton recognized the usefulness of rating in some instances, he believed that "it is desirable and rapidly becoming possible to have more objectively determined items by means of which to evaluate the teacher's procedure" (p. 405).

One of the foremost proponents of science in education and supervision was A. S. Barr (1931). He stated emphatically that the application of scientific principles "is a part of a general movement to place supervision on a professional basis." Barr stated in precise terms what the supervisor needed to know:

Supervisors must have the ability to analyze teaching situations and to locate the probable causes for poor work with a certain degree of expertness; they must have the ability to use an array of data-gathering devices peculiar to the field of supervision itself; they must possess certain constructive skills for the development of new means, methods, and materials of instruction; they must know how teachers learn to teach; they must have the ability to teach teachers how to teach; and they must be able to evaluate. In short, they must possess training in both the science of instructing pupils and the science of instructing teachers. Both are included in the science of supervision. (pp. x, xi)

Barr said the supervisor should first formulate objectives, followed by measurement surveys to determine the instructional status of schools. Then, probable causes of poor work should be explored through the use of tests, rating scales, and observational instruments. The results of supervision, continued Barr, must be measured. Most important, according to Barr, the methods of science should be applied to the study and practice of supervision. More concretely, Barr (1925) asserted that a scientific analysis of teaching is a necessary part of the training of a supervisor: "How can the scientific

knowledge of the teaching process be brought to bear upon the study and improvement of teaching?" Barr contended that teaching could be broken down into its component parts, and that each part had to be studied scientifically. If good teaching procedures could be isolated, thought Barr, then specific standards could be established to guide the supervisor in judging the quality of instruction. He based his scientific approach to supervision "upon the success of the professional student of education in breaking up this complex mass into its innumerable elements and to study each objectively" (pp. 360, 363).

Another noted personality of the time who influenced the idea of scientific supervision was Charles H. Judd. In an address before the National Association of Secondary School Principals, Judd (1920) stated that "teachers must be supervised in a fashion which is at once direct and scientific." Judd criticized the manner in which supervisors were chosen without adequate training in the science of education. In the future, he said, "They will be selected because they are equipped by mental capacities and by careful scientific study for administrative and managerial functions." Judd further urged that "both the non-supervisory attitude and the attitude of excessive supervision ought to be replaced by scientific method of determining whether classroom work is efficient or not" (p. 31).

E. E. Lewis, a superintendent in Rockford, Illinois, interestingly, yet curiously compared the science of child intelligence to the work of supervisors in measuring teacher performance. Lewis (1923) described three ways of measuring pupil accomplishment: through personal opinion, comparison with other pupils, and by standard units of accomplishment. Dismissing the first two rather quickly, Lewis favored IQ testing. "It is much fairer and far more accurate to measure the general intelligence of a child in terms of an IQ than it is to measure in terms of 'bright,' 'average,' or 'dull.'" Furthermore, continued Lewis, "an IQ means practically the same thing anywhere the child may happen to go, while 'bright,' 'average,' or 'dull' may change meaning when used by the same person a half hour later." Lewis also emphasized the importance of fair and just scientific comparison between teachers. "Let us give this new movement in education our heartiest support and in time we will really have a science and a technique of measurement that will be a substitute for inaccurate opinion and comparison" (pp. 43, 146).

One of the earliest objectors to the use of scientific supervision was a professor of education at Ohio State University named Orville G. Brim. In an article entitled "Changing and Conflicting Conceptions of Supervision," Brim (1930) acknowledged "the rapid growth of scientific supervision." He labeled the application of science to the work of supervisors as "inspectorial, a fact-finding process." He claimed that use of "diagnostic tests" and recording teacher behaviors in "numerical form" had the "quality of authority, of finality." Decrying such an application of science to the work of supervision, Brim stated emphatically and with a tinge of sarcasm:

This belief in the reliability of the findings of scientific investigations, the belief that the standard established should become the universal practice, has tended to make the scientific supervisor more autocratic than his predecessor, the inspector, for the scientific supervisor thinks he has the authority of ‘facts’ spelled in capital letters.” (p. 133)

While others joined Brim in his condemnation of the injudicious application of science to supervisory practice, the impetus for their criticisms can be found in the groundbreaking work of John Dewey (1916, 1929). Dewey (1916) believed that the future of civilization depended “upon the widening spread and deepening hold of the scientific habit of mind; and that the problem of problems in our education is therefore to discover how to mature and make effective this scientific habit.” Dewey held that:

Science must have something to say about what we do, and not merely about how we may do it most easily and economically. . . . When our schools truly become laboratories of knowledge-making, not mills fitted out with information-hoppers, there will no longer be need to discuss the place of science in education. . . . The problem of educational use of science is to create an intelligence pregnant with belief in the possibility of the direction of human affairs by itself. . . . The method of science engrained through education in habit means emancipation from rule of thumb. (pp. 223, 225)

Dewey asserted that science, to have any lasting effect in schools, must be grounded in the “lived experience” of the members of each school.

Science is experience becoming rational. The effect of science is thus to change man’s idea of the nature and inherent possibilities of experience. By the same token it changes the idea and the operation of reason. Instead of being something beyond experience, remote, aloof, concerned with a sublime region that has nothing to do with the experienced facts of life, it is found indigenous inexperience: the factor by which past experiences are purified and rendered into tools for discovery and advance. (p. 228)

Dewey, in sum, believed that scientific theory was related to practice “as the agency of its expansion and its direction to new possibilities” (p. 228).

Dewey’s (1929) most scathing critique of existing scientific practices in the schools, as well as the most lucid exposition of his ideas on scientific inquiry, was set forth in his sometimes read, but not understood, volume *The Sources of a Science of Education*. In response to the question: “is there a science of education? . . . Can there be a science of education?” Dewey replied that while scientific and systematic investigation sheds light

on a range of facts by enabling “us to understand them better and to control them more intelligently, less haphazardly and with less routine,” our current utilization of science in schools is inadequate and misdirected. Dewey denounced the current practice of science in education. There is “a strong tendency to identify teaching ability with use of procedures that yield immediately successful results, success being measured by such things as order in the classroom, correct recitations by pupils in assigned lessons, passing of examinations, promotion of pupils to a higher grade, etc.” Educators, charged Dewey, “want recipes for classroom success.” This view of “science is antagonistic to education as an art,” declared Dewey. Dewey claimed the use of rating schemes was not an “enhancement of science in education,” but a detraction from the true aims of science. “Such attempts, even when made unconsciously and with laudable intent to tender education more scientific,” he said, “defeat their own purpose and create reactions against the very concept of educational science.” Dewey concluded his little book with a recapitulation and final admonition. The only way, said Dewey, to create a science of education is to involve oneself in the “educational act itself.” The intense interaction between practitioner and pupil will in and of itself yield “scientific formulations.” “Education is by its nature an endless circle or spiral, . . . in its very process it sets more problems to be further studied, which then react into the educative process to change it still further, and thus demand more thought, more science, and so on, in everlasting sequence.” Dewey warned that to ignore the value of “experimentation and discovery” will lead to a mistaken conception of the “true meaning of scientific inquiry.” Science based on experimentation, said Dewey, is emancipatory and purposeful.

Dewey’s ideas of science as applied to educational practice did not receive wide acceptance. Supervisors, in particular, did not adopt Dewey’s model of scientific inquiry. Much of his writing, especially about the science of education, was technical and enigmatic in its presentation. As a result, confusion and misinterpretation of Dewey’s views prevailed. Given the fact that there was much misunderstanding it was not surprising that supervisors did not adopt Dewey’s ideas. More significantly, supervisors eschewed his ideas about science because they were more interested in definite, ready-made prescriptions. Dewey’s admonitions to avoid definitive scientific formulations in favor of gradual experimentation of ideas in the classroom did not find favor among supervisors. Supervisors desperately wanted instant solutions to the problems they faced in schools. Rating schemes, for example, were appealing to supervisors because they could, it was thought, accurately assess the performance of teachers’ work. Their ideas backfired as teacher opposition to rating schemes and misuse of science grew in intensity (Hill, 1918; Rousmaniere, 1992).

Although Dewey’s ideas did not hold sway in most schools, proposals were proffered that aligned with Dewey’s scientific formulations. Throughout the thirties, forties, and fifties, the idea that supervision involves improving instruction based on classroom observation gained momentum (see, e.g., Burton & Brueckner, 1955). Supervision as a means of improving instruction through observation was also reinforced by the use of “stenographic reports” which was the brainchild of Romiett Stevens, a professor at Teachers College, Columbia University. Stevens thought that the best way to improve

instruction was to record verbatim accounts of actual lessons, "without criticism or comment." Stevens's stenographic account was "the first major systematic study of classroom behavior" (Hoetker & Ahlbrand, 1969). Dewey, I surmise, would have applauded Stevens's stenographic accounts because they were descriptive, not prescriptive. Stevens' work needs greater attention because it laid the groundwork for much of the descriptive, non-judgmental approaches of supervision that were advocated in the 1970s till this day.

As supervision matured in theory throughout the fifties and beyond, emphasis was placed on participative and collegial functions of supervision. Invented by Morris Cogan (1973) at Harvard University, clinical supervision was conceived as a "vehicle for developing professionally responsible teachers who were capable of analyzing their own performance" with an "emphasis on reflective problem solving" (Pajak, 2000, p. 5). Goldhammer (1969), one of the early proponents of clinical supervision and a student of Cogan, stated that the model for clinical supervision was "motivated, primarily, by contemporary views of weaknesses that commonly exist in educational practice" (p. 1). The premise of clinical supervision was that a prescribed, formal process of collaboration between teacher and supervisor could improve teaching. The literature of clinical supervision has been replete with concepts of collegiality, collaboration, assistance, and improvement of instruction. Bolin and Panaritis (1992) explained that clinical supervision "appealed to many educators" because of its "emphasis on 'collegiality'." Clinical supervision favored collaborative practice over inspectional, faultfinding supervision. Supervision as a science seemed to take a backseat to more simply engaging teachers in meaningful conversations about their practice in the classroom. Prescriptive measures of supervision were not advocated. This was also borne out in the interviews below. It should be noted, though, that as is usual practice in education and supervision, in particular, a disconnect between advocated theory and every day practice in schools existed. Many schools, despite advocacy for collaboration, incorporated traditional forms of inspectional supervision. Such practices focused on observation usually for evaluation wherein a supervisor observes a teacher (a pre-conference might have occurred) and then writes-up a formal evaluation for the teacher's file (a post-conference may or may not have occurred). Supervision of this sort was reminiscent of impressionistic and evaluative supervisory practices throughout the early twentieth century.

Criticism leveled at the educational bureaucracy continued through the 1980s and had consequences for school supervision (Firth & Eiken, 1982). Throughout this period educators continued to consider alternative methods of supervision. In the early eighties, developmental supervision, in which varied levels of teaching abilities were acknowledged, gained attention (Glickman, 1981). By the end of the decade transformational leadership, which advocated that supervisors serve as change-agents, became popular (e.g., Liethwood & Jantzi, 1990). Other writers, in the 1990s, advanced alternative approaches known as "culturally-responsive" supervision (e.g., Bowers & Flinders, 1991). Teacher empowerment (e.g., Darling-Hammond & Goodwin, 1993) gained attention as a viable means for teachers to become active participants in decision-making processes in schools. Peer supervision (e.g., Willerman, McNeely, & Koffman, 1991) appeared in the literature as an alternative to traditional supervision by

“professionally trained supervisors,” as did cognitive coaching (Costa & Garmston, 1994). Other collegiality and democratic supervisory methods continued to receive notice (e.g., Ovando, 1995, 2000; Ovando & Harris, 1992; Smyth, 1991).

The publication of *Supervision in Transition* (1992) by the Association for Supervision and Curriculum Development (ASCD) marked a refinement in the changing conception of supervision as a democratic enterprise. Glickman, editor of the yearbook, clearly set the tone by stating emphatically that the very term “supervision” connoted a distasteful, even “disgusting” metaphor for school improvement. Instead of even using the words “supervision” or “supervisor,” educators, or what Glickman called “risk-taking practitioners,” were more comfortable with terms such as “instructional leadership” and “instructional leader.” The transition that Glickman and the authors, of this comprehensive account of supervision, envisioned was one that valued collegiality. Supervision, in the words of Sergiovanni (1992), was viewed as “professional and moral.”

Other models and conceptions of supervision emerged in an attempt to extend democratic methods in order to disassociate itself from bureaucratic and inspectional supervision. Clinical, developmental, transformational, among other models of supervision, then, had a common bond in that they emerged to counter the ill effects of supervision’s bureaucratic legacy.

During today’s high-stakes accountability NCLB era, directive approaches to supervision are commonplace (Marshall, 2003; Sullivan, Shulman, & Glanz, 2005). One such practice is known as the walk-through promulgated by Downey, Steffy, English, Frase, and Poston, Jr., (2004) in a volume titled *The Three-Minute Walk-Through*. Such practices find justification within a standards-based educational milieu. They also find legitimacy given the overall pejorative legacy of the supervision field. “Walk-through,” conceived as a democratic process, involving teachers, is used primarily as a monitoring tool (Roberts, & Pruitt, 2003). Such a supervisory practice is aligned with attempts to discover a science of teaching. The Institute of Education Science, sponsored by the U.S. Department of Education, discussed in the Implications section of this paper below, has identified “research-based” findings of sound educational practices for “implementation” in schools and classrooms. Supervision has become a monitoring instrument to ensure that such practices are employed (Sullivan, 2006).

Very few empirical studies exist on the effectiveness of walk-throughs. Jane David (2007), recently in reviewing extant research, explains that walk-throughs, “also called learning walks, quick visits, and data walks,” are “touted as a systematic way to gather helpful data on instructional practices, . . .” (p. 81). In explaining the idea behind the concept, she says principals, for example, might “want to know whether teachers are able to put into practice their recent training on quick-writes and pair-shares” (p. 81). Sullivan (2006) explains that walk-throughs “shed light on an approach to classroom observation that can become monitoring couched in the language of teacher growth and reflective practice” (p. 2). Sullivan cites the following characteristics of walk-throughs as evidence of their monitoring function:

1. Unannounced – in authentic reflective practice and supervision, teachers or teachers and supervisor conduct a planning conference to decide on a focus of observation. Much of the learning can take place before a classroom visit so that the observer sees improving or improved practice. Also, planning gives the teacher the opportunity to discuss his or her perceived needs rather than leaving it to an unannounced visitor. Unannounced visits eliminate the role of the teacher in initiating and reflecting on what will be observed.
2. Brief (2-3 minutes) – reflective practice involves observation as well as feedback. What kind of meaningful learning or teaching can be observed in 2-3 minutes, even if the observations are repeated several times before a discussion takes place?
3. No checklist of teaching practices to look for – apparently an improvement on a checklist, however authentic, reflective supervision has one focus. Multiple foci do not result in improved instruction; only confusion for the teacher.
4. Focus on professional growth – how can one address real professional growth based on 2-3 minute observations?
5. Ultimately leads to reflective conversation – reflective conversation is well nigh impossible when the teacher has had no say in the observation process and is presented with feedback from an authority. Reflective conversation has to be developed together, and in this case is based on one-sided information. (p. 2)

Sullivan expounds on her critique of the walk-through, especially the Downey et al model, but concludes by saying, “The real danger of the “Three-Minute Classroom Walk-Through” is that it provides a justification for the worst sins of the ‘snoopervisor’” (p. 3).

David (2007) reviewing the little research available on walk-throughs explains that according to one study “administrators find walk-throughs more useful than do teachers (who rarely receive individual feedback)” (p. 81). David points out “significant risks” with such practices. She says when a climate of trust and improvement is not secured in a school, then walk-throughs are perceived “as compliance checks, increasing distrust and tension” (p. 82). David, in her article, seems to suggest, however, that walk-throughs if appropriately implemented can play “a constructive role” in instructional improvement (p. 82). She advocates proper training for observers, adequate communication of the purposes of walk-throughs, and recommends that it not merely be used to monitor implementation of some school-wide practice. David and others seem to not understand that walk-throughs and similar approaches are likely to be viewed as inspectional because they resemble check-lists approaches of the past. Short cuts and quick fixes, expedient and efficient as they are, are not conducive to classroom and school improvement.

Phone Interviews

1) Robert H. Anderson (former junior high school teacher, principal, superintendent, faculty member of Harvard University, dean of education at Texas Tech University, and president of Pedamorphosis, Inc.). Interview conducted on Thursday, November 15, 2007 and Sunday, November 18, 2007.

As stated in my proposal for this paper presentation, I planned on interviewing Bob Anderson (2007) because, as he informed me many years ago, he personally knew A.S. Barr, one of the progenitors of scientific supervision, along with other noted figures at the time. Obtaining Dr. Anderson's recollections and insights I thought would prove very useful to more accurately determine Dewey's influence and to, more generally, examine the "science of supervision" during the period and soon afterwards. Besides, it would also be very interesting to obtain this oral history from a man, who is 90 years old and who has lived a portion of the history recorded above.

Bob, as he insisted I call him, was his usual effervescent and sharp-witted self. The years have been very gracious to him and he enjoys good health and an active life (attributable, he says, to never smoking, imbibing infrequently, staying intellectually active, and due, most of all, to a "good wife"). Dr. Anderson is among the most influential supervision scholars in the twentieth century. He had just returned from China, where he conducted some educational seminars with his wife Karolyn. "Although I haven't taught in a classroom for a while, I've visited many classrooms recently." He is still involved with the publication he innovated many years ago, *Wingspan* (see <http://itproj.utv.miun.se/wingspan/index.lasso>).

Professor Anderson responded to my questions with clarity and precision. Although he kept saying "Well, Jeffrey, that was a long time ago," he seemed to have excellent recall. I explained the purpose of my research and the reasons why I wanted his input. "Well, you know," he said, "A.S. Barr was my advisor and teacher. In fact," he continued matter of factly, "one summer I rented a home next to his and we spent some time together, . . . chatted you know." He described Barr as a "down to earth fellow." Barr, according to Bob, offered him helpful career guidance. According to Anderson, Barr thought that "rating cards were a bunch of crap" . . . (a somewhat different description than I had made earlier in this paper). Barr's scholarship on the science of supervision occurred during a time at which Anderson was still in high school. Dr. Anderson described Barr's approach to supervision as "personal, a friendly activity." When I queried Dr. Anderson about Barr's views of scientific supervision that seemed to me to be quite distant from a personalized, humanistic approach to working with teachers, he said, "well, you know, I knew him much after he wrote much about the science of supervision." Anderson's comment prompted me to wonder whether Barr altered his earlier views. I conducted a literature review in an attempt to determine if my inference was accurate. I could not find any work that indicated that Barr had altered his views except for his major textbook (Barr, 1947) titled *Supervision: Democratic Leadership in the Improvement of Learning*. For Barr, the task of a supervisor was fivefold:

1. determine the objectives of the lesson
2. survey the classroom learning environment
3. search for the causes of unsatisfactory pupil achievement
4. train teachers to improve instruction
5. measure the results of supervision

Apparently, Barr did not envision a contradiction between a scientific supervisory approach to teaching and democracy. He was not alone. Many shared his view. William A. Smith (1934) in an article entitled “Dictatorship and Democracy in Education from a Teacher’s Viewpoint,” asked, “Will the schools prepare for the efficiency of an autocrat in government or will they prepare for the less efficient, more complicated, and idealistic democracy?” His answer was typical among many of his contemporaries, “Efficiency and democracy should not be viewed as competing ideas, but rather as one entity” (p, 614). Schools, he thought, could be efficient democracies utilizing scientific technologies. Many years ago when I examined this history in depth (Glanz, 1991), I concluded that the desire to combine cooperative supervisory approaches with more efficient and scientific approaches was indeed the “dream” of many supervisors at the time in order to legitimize their professional aspirations. Some astute people at the time, however, realized an inherent ambiguity in this quest. Jesse H. Newlon, famed former superintendent in Denver, Colorado and later professor of education at Teachers College, Columbia University claimed that a reconciliation “between cooperation and dictatorship” was impossible. He argued that it was not feasible to require “obedience to constituted authority,” and at the same time, encourage “teacher participation and freedom.” Newlon (1934) explained:

Almost all writers on the subject emphasize the importance of the authority of the principal. The advantages of a co-operative type of supervisory relationship are stressed by most of the writers, but the practice which they advocate often seems inconsistent with these doctrines. Burton, for example, says, “Democracy has implicitly in it the idea of delegated authority and of obedience to properly constituted expert leadership.” Burton has really stated the crux of the whole problem, *but he does not make clear* [italics added] how obedience to expert authority is to be reconciled with genuine teacher participation in the formulation of policies and freedom to exercise professional judgment in carrying out these policies.” (pp. 188, 196)

Courtis (1928) summed up this view succinctly: “Can you supervise me scientifically and respect my personality? I’m afraid not” (p. 339). Lucio and McNeil (1969) popular author’s of a major textbook on supervision explained the difficulty of advocating a scientific approach of supervision that aimed to inspect teachers. They said, “teachers were regarded as instruments that should be closely supervised to insure that they mechanically carried out the methods of procedure determined by administrative and special supervisors” (p. 3). Equally oppressive, they thought, were scientific methods that sought to quantify, explain, and predict with precision teaching behaviors in the classroom that would best promote student learning. Such presumed certainty of supervisory methods was unrealistic and misguided. For these supervisors, teaching was

a science, not an art, through which application of a prescribed set of behaviors would yield teaching success and thus student achievement. When I asked Bob what he thought about Barr's supervision steps, he uncharacteristically paused for a moment during my conversation with him, and then responded, "Supervision as science or whatever you call it has three phases:

1. observe and collect information
2. reflect
3. change practices

"Any supervisor worth a damn," he said emphatically, "would follow these steps. . . . Don't you agree?" he asked. When I hesitated, not because I disagreed by the way, he was quick to underscore what he said. "Supervision starts with gathering information during a classroom visit, which should then lead to conversation between teacher and supervisor." "Barr," he went on, "was one of my heroes, . . . and helpers."

Anderson continued to explain his view of the supervision process. He said that "the authority to evaluate teachers should be apart from supervision." "Supervision," he explained, "was a helping, collaborative function." "That's a pretty good sentence, right Jeffrey?" he asked. "Damn good," I said.

I then asked him his feelings about the science of supervision. "Is supervision scientific?" he rhetorically asked. "Most behavior of supervisors is not scientific, I think." He humorously, yet seriously continued, "Very few people in the United States who walk in and out of classrooms don't know "their ass from a whole in the ground." When I queried him about walk-throughs, he admitted he had not heard about them. After explaining the process to him, he said that "although it might be better than nothing, I think without adequate follow-up and deep conversations about what occurred in the classroom the process doesn't make sense. "There must be time for lengthier conversations," he said. Moreover, "if these folks," he said, "were merely checking things off a list, well, . . . then it's an oversimplification of what supervision is."

He went on to say that approaches like Romiet Stevens' stenographic accounts, mentioned earlier, as well as approaches that utilized these "crazy" forms (I suppose he meant classrooms observation forms used by the likes of Acheson and Gall, 1992, Glickman, Gordon and Gordon, 2006, Zepeda, 2005, and Sullivan and Glanz, 2004) were "gimmicky." For Anderson, supervision meant that a skilled, knowledgeable, prepared, thoughtful, sensitive, and experienced supervisor could walk into a classroom and absorb classroom interactions as fully as humanly possible. Such observations would be then used in conversations with the teacher presumably during a post-conference. "As a supervisor I would come away with a good understanding of what is happening in that classroom, . . . I don't mean to say I have the absolute truth, uh, a scientific understanding, but I do have a good sense, . . . enough to start meaningful discussion with this teacher. "I don't intimidate, I elucidate, . . . I care, suggest, and offer suggestions," he explained. "Don't forget," he continued," Barr and Judd wrote more than a half century ago, . . . at the time they were using the best techniques they could."

He felt that his practice of working with teachers required much more depth than the walk-throughs described earlier. He also amplified his views by saying, “What I do is to take impressions, . . . I don’t use checklists and I certainly don’t look for things to get teachers, . . . I’m an observer who can hopefully shed light on classroom practice, and give teachers new insights into their practice to think about.” When asked about whether a science of education or supervision was possible, he responded, “Well, sure it is, . . . but it hasn’t happened in my lifetime.”

When asked about today’s educational scene, Anderson was quite vociferous in his opposition to practices he considered “outrageous.” “The testing industry,” he explained, “has blown a huge hole in good education. . . . people are crazy with numbers.” “If I was powerful, I’d get rid of all those tests. Testing should be helpful, not judgmental.” Regarding supervision, he observed “Teachers today do not get good feedback about their teaching. They simply give back what the supervisors want to see, objectives written on the board, standards followed, . . . very prescriptive . . . it’s very sad.”

Anderson believed that Dewey was correct when he criticized attempts to emphasize a definitive “science of education,” paying little attention to the artistic side of the field. Paraphrasing Anderson here, “supervision and teaching, for that matter are artful. . . . To ignore that richness is a shame.” Parenthetically, although Anderson never personally met Dewey, he did hear him speak at a conference. “He was something else, Dewey was,” reported Anderson.

After our interview I found this written comment by Anderson (2006) on a web page: “Dewey’s work is almost literally timeless, . . . his ideas and proposals for making schooling a more productive and well-coordinated enterprise have had such a salutary impact upon practice over so many decades is a tribute not only to him but also to the many educators who shared his viewpoint”

He concluded our talk by commenting that “teachers will always need someone else to look at their work in a friendly way.” When I asked him about the value of supervision, he responded, “We have to make all kids live better.”

2) *Gerald R. Firth (former junior high school teacher, curriculum director, professor of educational leadership at The University of Georgia, chair of the Department of Curriculum and Supervision, dean of education, and President of ASCD). Interview conducted on Tuesday, November 20, 2007.*

My interview with Dr. Firth (2007), a noted scholar who was also enormously influential in my own career, was briefer than it was with Dr. Anderson, but nonetheless quite helpful. I won’t cover, in this brief review of our talk, areas that were already addressed by Dr. Anderson, but I will emphasize ideas directly related to the theme of this paper. Coming out of the sciences, Dr. Firth emphatically claimed that “teaching is an art, and not a science.” “Science can serve as a tool,” he explained, “but it cannot reduce teaching or supervision practices into a nice and neat category.” “Dewey,” he explained, “was certainly influential but I learned most about Dewey from Tom Hopkins, a gifted professor, at Teachers College, Columbia University. Dewey’s ideas about science, he

noted, were largely ignored by “men of his day.” Dewey’s application of science to education and to supervision, indirectly, was nuanced and cautionary. He urged educators to mindfully consider science as a window or lens to study and view education practice, but not as a means to derive scientifically proven strategies. The key term in Dewey’s book that is often overlooked is the word “sources.” The title is “The Sources of a Science of Education, . . . ,” not a “science of education.” Dr. Firth lamented the current era of high stakes testing and accountability that “repudiate all that I believe in.” “Schools,” he said, “are cookie-cutters.” Supervisory practices, he explained, simply reflect the standardized era in which it finds itself. It is not surprising, he said, to find supervisors using “3-minute walk-through” approaches within such an educational milieu.

3) Ben Harris (*former teacher, supervisor, curriculum director, consultant, and M. K. Hage Centennial Professor at the University of Texas at Austin*). Interview conducted on Friday, November 23, 2007.

Dr. Harris (2007), author of many widely read textbooks in the field, was gracious and eager to discuss his views. Eighty-five years old and very sharp on recalling past experiences, Harris mentioned that earlier works of Dewey informed the 1929 treatise on science, “particularly writings,” he said, “in 1898, 1902, and 1906.” “Dewey’s attention to research on student learning, individual differences, and their relevance to curriculum theory and teaching is significant.” Harris commented that “today’s emphasis on scientific evidence in relationship to politicized governmental mandates completely neglects how people learn.” He continued in offering insights about today’s “politicized environment” by saying that the “NCLB Act is a massive, horrendous new development in education reflecting politics, not what’s necessarily best for teaching, curriculum, and school organization.” “It neglects,” he thought, much of “what we know from research in education.” “After the war and in the early 1950s, supervisors,” he continued, “relied on research on learning theory, individual differences among learners, and on the environmental influence on learning. . . . Supervisors, as specialists, led the way to impacting teaching and learning by drawing from this wealth of research.” Use of science, he explained, was not dogmatic or prescriptive in its nature, but was “suggestive.”

Regarding Dewey’s influence, Harris said that “during my early years Dewey was less influential on my thinking than research on adolescent behavior because I started out at the junior high level. But, later his influence was marked, especially when I worked at the elementary school levels.” Dewey’s “ideas on experimentalism of science” was largely ignored, Harris reported.

Hearing Ben Harris talk about the extent to which school people misunderstood or misused science in education, reminded me of Dewey’s (1988) other even more obscure work titled *The Quest for Certainty: A Study of the Relation of Knowledge And Action*. In this difficult to read work, albeit invaluable, Dewey argues against Descartes’ (1999) rationalism that stressed deductive reconstruction of all knowledge as necessarily

emanating from basic truth. Dewey questioned this reliance on “certainty” as a necessary condition of knowledge. Knowledge, for Dewey, was not static and absolute, but provisional and dynamic. Knowing, in Dewey’s mind, was a process of discovery, of experimentation. When we know things, thought Dewey, we do not know them in themselves. Rather, we know our interaction with them. According to this epistemology, one cannot grasp the essence of classroom interaction, for instance, unless one actively engages in classroom life. Such involvement is not mechanical, abstract, or wholly scientific, at least in the positivist sense. Spotting good teaching practice requires a disciplined inquiring approach framed, not on certainty, but on the exploratory nature of science within a social setting (as opposed to an experiment conducted in a laboratory).

Continuing this line of thinking, Harris shared his views of education and supervision as an art and science. He felt that “supervision is an applied field of practice that has an array of scientific bases, but enormously important are the interpersonal skills and empathy that are much more artistic in nature.” For example, he explained, “the ability to sense when a teacher wants to be listened to” is an artist’s skill too many take for granted. Furthermore, “knowing when and how to probe and frame questions” is an essential supervisory artful skill.

Cognizant of the 3-minute walk-through approaches, Dr. Harris cited its advantages (mostly administrative) and disadvantages (mostly instructional). “I am, as you know Jeffrey, a long time advocate of thorough classroom observation. I don’t reject the walk-throughs if used to just get acquainted as a survey method, . . . fine, . . . but it’s not diagnostic.” He continued, “to have it only as the only way of knowing what a given teacher . . . needs without offering substantive help, support, and encouragement, . . . well, I don’t respect it.” Very insightfully, Harris comments, “What we have, I fear, is a corruption of practice when our purposes get distorted . . . we use tests, checklists, 3-minute walk-throughs, . . . they are distortions of what are otherwise good practices. . . .” He continued, “supervisors don’t seem to grasp that the only real reason why they exist is to help teachers and kids. Kids have 100 different needs that checklists don’t fit, . . . individual differences are swept aside.” His views on accountability naturally emerged. He said, “politicized slogans for ‘accountability’ are shameful because we neglect the needs of teachers and especially kids.” He concluded by saying that a recent issue of the *Harvard Business Review* critiqued accountability methods in business because it “destroys innovation and morale.” “The same thing occurs,” he said, “in education.” Observations culled from walk-throughs, he said, “are limited if its purpose is to hold them accountable for preconceived practices.” Reiterating and underscoring his advocacy of meaningful supervision, Harris stated “We need careful, thoughtful observation, . . . not quick checklists.” Principals, said Harris, learn from observing deeply. “These checklists deprive principals themselves of an invaluable learning opportunity, . . . principal learning is sacrificed for efficiency.”

4) Barbara Nelson Pavan (former teacher, principal, and professor of educational administration at Temple University). Interview conducted on Thursday, November 29, 2007.

Articulate and passionate, Dr. Pavin (2007), also highly respected among scholars and students of supervision, graciously shared her definition of supervision as “the improvement of instruction to enable students to learn more effectively.” Elaborating, she said emphatically, “I am a devoted clinical supervision person.” Clinical supervision, for Professor Pavin, involves “reflecting back to the teacher what is happening in the classroom.” “Clinical supervision,” she continued, “is essentially an art in interacting with the teacher, although you could say the science part involves selecting and using techniques to collect data from the classroom.” “Clinical supervision is not a mechanical process, . . . it’s intuitive,” she explained. “I believe in and used Goldhammer’s model because it was more intuitive” [than the Cogan model]. “Clinical supervision is an ongoing process.”

Dr. Pavan clearly distinguished supervision from evaluation. “Supervisors often use checklists,” she reported, “but that’s more evaluation, although they call it supervision.” She wasn’t particularly against walk-throughs. She said, “I’m in favor of supervisors knowing what’s going on in classrooms and walk-throughs give them sort of quicky feedback, . . . but by itself, it’s insufficient.” Responding to the science issue, Dr. Pavan’s response was quite Deweyian. “Supervision stimulates conversations, . . . data are discussed, teachers and supervisors reflect collaboratively on what seems to be good practice, and then, . . . *they try it out*” [emphasis added].” “I’m against,” she continued, “saying to teachers, ‘you must do this or do that.’” “Supervision is not prescriptive,” nor can it be, she implied. “You take some ideas that emerge from the supervision process and you see what works, given the situation, the setting, the students, etc.”

Dr. Pavan was very influenced by Dewey’s work. “Every time I look at Dewey, . . . it’s refreshing.” “You know I went to Bennington College that was framed on a Deweyian approach of ‘trying things out.’” “Dewey’s ideas,” she said rather proudly, “was engrained into me.” “Also influential,” she reported, “was the child studies work in the twenties and thirties, . . . very influential. They emphasized watching children, seeing their response, working with children. That’s not science, . . . that’s what Dewey advocated.”

Addressing Dewey’s lack of influence on school people of his day, Dr. Pavan explained, “They have to make it a priority, I mean the kind of supervision they believe in and want to do. Sure they may not have a lot of time, but if it’s important, they’ll schedule the time necessary.” On Dewey’s influence today, she said, “It’s probably no different, . . . especially since we have NCLB, . . . good in theory, poor in practice.”

Pavan concluded by saying that more than science, “Integrity and trust are at the core of the supervision process.”

Implications for Current Supervisory Practice

Dewey criticized educators of his day for attempting to discover ready-made recipes for teaching success without fully understanding the nature of scientific inquiry. What can

we learn about supervisory practice today from Dewey's critique of scientific dogmatism? This paper has challenged readers to consider past efforts to reach a science of supervision in light of current practices. Certainly, circumstances today, in light of NCLB and its concomitant high stakes testing influence and vigorous accountability issues, are not precisely what educators during the first half of the previous century confronted. However, educators of yesteryear did confront seemingly intractable problems of their own that are similar to criticism of supervisory practices today. Declining test scores, teacher qualification issues, lack of adequate supervision, insufficient attention to instructional exigencies faced by teachers, and lack of research into instructional and supervisory practices characterize both eras. Educators in Dewey's day realized these problems and looked to science for a cure-all. Dewey's vociferous attack was not necessarily about their attempt to study education scientifically. His critique centered on a two-fold problem. First, he lamented their impatience for quick solutions. "Learning to wait," Dewey (1929) explained, "is one of the important things that scientific method teaches, . . ." (p. 42). Dewey criticized educators who looked to science to provide ready-made answers. Second, and not an unrelated point, when science, he said, did yield some valuable (or in today's lingo "research-based") findings, even then, a deliberate, tentative, and inquiring stance must be taken. He explained the title of his book on this point, which is crucial to understanding Dewey's perspective:

The net conclusion of our discussion is that the final reality of educational science is not found in books, nor in experimental laboratories, nor in the class-rooms where it is taught, but in the minds of those engaged in the educative act. But they are not *educational* [italics in original] science short of this point. They are psychology, sociology, statistics, or whatever. . . . This is the point upon which my whole discussion turns. We must distinguish between the *sources of educational science* [italics in original] and scientific content. We are in constant danger of confusing the two; we tend to suppose that certain results, because they are scientific, are already educational science [emphasis mine]. Enlightenment, clarity and progress can come about only as we remember that such results are *sources* [italics in original] to be used, through the medium of the minds of educators, to make educational functions more intelligent. (pp. 32-33)

Surveying the scientific dimensions of supervision, Killian and Post (1998) document the historic proclivity to cling to theories of scientific management in education and their impact on supervisory practice. Citing Sergiovanni and Starratt in their noted text *Supervision: A Redefinition*, they explain that as long as society values a technical-rational approach that emphasizes scientific discoveries as paramount, scientific conceptions of supervision are inevitable. Killian and Post explain, ". . . claiming that supervision and teaching are applied sciences lends respect to those fields, and that trying to use research to identify the 'one best practice' is attractive." Sergiovanni and Starratt, according to Killian and Post, state that "teaching and learning are too complex to be captured simply. In the real world of teaching, none of the assumptions hold up very well and the related practices portray an unrealistic view of teaching and supervision" (p. 1051). A more realistic view is aligned with Dewey's notions of the tentativeness of

science in education and its exploratory nature. Killian and Post cite a variety of “problems that plague applications of scientific management to supervisory practice” including, among others, “rushed implementation” (p. 1051). “Failure to establish an adequate research base in advance of implementation results,” Killian and Post argue, “in . . . catastrophic” results (p. 1052). They offer this concluding note, scientific supervision, stemming from the days of Taylor and Bobbitt, “continues to be a major competing force in supervision.” Citing Sergiovanni and Starratt once more, the say, we seem to prefer the exact answer to a wrong question rather than an approximate answer to the right question. Killian and Post end, “The important issue thus becomes, not so much whether the legacy of scientific management will endure, but whether our predilection for the most simplistic of its forms can be tempered by some lessons learned about its failures” (p. 1052).

As I was writing this section of the paper I came across a web site called Doing What Works put out by the U.S. Education Department (<http://dww.ed.gov/index.cfm?>). Hit play and here's what it says, in part:

I am a teacher. I am an assistant superintendent. I provide assistance to schools and district. I needed help and found it here. Welcome to the Doing What Works web site sponsored by the U.S. Department of Education (and the Institute of Education Science). This site is designed to support NCLB by helping educators to use research-based practices in their schools and classrooms. . . . We don't have all the answers when it comes to understanding how students learn best. But we do know some things that are likely to make a difference. . . . The site provides research-based practices and examples of implementation tools. Will it help me meet the goals of NCLB? The NCLB Act of 2001 was passed to ensure that all of our children get a quality education. It holds schools accountable for helping all students read and do math and science at grade level by the year 2014. . . .

What would strike Dewey about this statement? Well, I guess he would applaud the part that states “We don't have all the answers when it comes to understanding how students learn best.” Yet, what he would find most troubling, it seems to me, are some of the text that follows:

But we do know some things that are likely to make a difference. . . . The site provides research-based practices and examples of implementation tools. Will it help me meet the goals of NCLB? The NCLB Act of 2001 was passed to ensure that all of our children get a quality education. It holds schools accountable for helping all students read and do math and science at grade level by the year 2014.

. . .

Allow me to break down each of these key sentences. “But we do know some things that are likely to make a difference. . . .” Fair enough. Science can indeed yield some useful information to inform classroom teaching practice. But Dewey cautioned us to avoid using “scientific discoveries” as inevitably applicable in all situations. As Dr. Pavan cautioned, context is key. Now for the next sentence, “The site provides research-based

practices and examples of implementation tools.” Harmless enough, or maybe a foreboding of what is to come? One can only presume that the “research-based” findings are indeed of sound methodology and have appropriate applicability (generalizability). Even if these “research-based” findings were sound, the second phrase, “and examples of implementation tools,” might imply a prescriptive nature without fully understanding or appreciating the unique social, economic, and educational circumstances of a particular school or classroom. Then the sentence, “It holds schools accountable for helping all students read and do math and science at grade level by the year 2014,” is perhaps most troublesome. If it were not for the track-record of NCLB and its uncompromising meting out of punishments to schools and districts that have not met their AYP objectives, the sentence might serve as a lofty goal, for after all, who’s against accountability and not in favor of every child reading and doing math? The incongruity, it appears to me, is in the fact that the statement states plainly that research has yielded “some” findings that are “likely” to make a difference. Such tentativeness is laudable until the accountability issue is raised. Dewey and the scholars I interviewed, I think, would lament the premise that schools, writ large, would be held accountable when facts have not been established for all situations under all conditions, not that such a goal is even possible. Dewey would be more deliberate and consider the unique circumstances and challenges of each school. Implementation of findings by this Institute of Education Science (notice the title, rather than using “Research,” a more tentative and exploratory term, the word “Science” is not too subtly attached to “education”). Operating under the aegis of science, NCLB and its adherents attempt to apply science rigorously and prescriptively. Dewey, it seems to me, would be on the forefront to challenge such an application of science to education and schooling. Unfortunately, if history is any indicator, his ideas and voice would be muted.

Interestingly, Prof. Edward Pajak (2007), respected professor of supervision and currently Chair of Education at Johns Hopkins University, in an email correspondence, agreed that “the field of supervision doesn’t seem to have much of a memory, which is true of education generally.” He also concurred that “Dewey’s influence on thinking in our field has been significant, but largely forgotten.” As regards to a “science of supervision,” he said, “I think you’re correct that we’re now looking for scientific ‘answers,’ instead of employing the scientific process to the work of educators, which is what Dewey really proposed.”

Regarding the NCLB web site mentioned above, it is interesting to note that several educators have supported the use of research-based findings based on “sound science” for adoption in schools. Robert J. Marzano’s (2007) work readily comes to mind. In his *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction*, he presents a “model for ensuring quality teaching that balances the necessity of research-based data with the equally vital need to understand the strengths and weaknesses of individual students.” Under the guise of “interventions that work,” Marzano’s work attempts to provide legitimacy for “scientific work” in education, teaching, and consequently, in supervision.

In another email correspondence, but this time with James Popham (2007), prominent professor emeritus at UCLA and noted scholar and author on assessment, I queried him about Marzano's work. Popham stated, "I have immense respect for him [Marzano] and his efforts. But I think it is always necessary to toss in a caveat or two when offering 'research-based' guidance regarding a phenomenon as multivariate as education." Popham claims that deriving findings "from empirical research in our field is probability-guided actions." He continues, "Even 'sound science,' at the very best, will only allow teachers to say, 'If I use this research-supported tactic, it is *more likely* that my students will achieve the curricular aim I have in mind for them than if I did not use this research-supported tactic—but I can't be *certain* that it will work.'"

So, what can we learn from Dewey's understanding of science and how might such an understanding inform current and, perhaps, future supervisory practice? The field of supervision needs to redefine, reculture, or, even, re-find itself (see English, 2007, who makes a similar argument about educational administration, albeit for different reasons). I think we need to find a more appropriate and reasonable balance between the art and science of teaching. Bob Anderson said that in order for us to have a science of supervision, or education for that matter, we need to continue research to establish a "solid base" for teaching practice. Extant research findings, verified time and time again in differing contexts, it seems to me, is critical for establishing such a base. Continued research will provide us a deeper, more thorough understanding of good teaching practice. Supervision, it seems to me, can benefit profoundly from such a teaching research base to inform work with teachers. But in the end, a science of education is not what we should be looking for. Rather, as Dewey has admonished, we need to look for the "sources" of a science of education. In that light our work is much more nuanced, tentative, less dogmatic and prescriptive. For Dewey, even expressed in his later works (Dewey, 1938), inquiry should be viewed as "thoughts-in-progress" so as to eschew misunderstandings, and outright errors. Supervision, thus, becomes a process of engaging teachers in an artful, in depth and continuous dialogue or conversation about what is transpiring in the classroom. That is the lesson I think Dewey would advocate. On this very point, Dewey (1929) said that education is unlike physics, chemistry, or biology. "Just because educational science has no such achievement of laws to fall back upon, it is in a tentative and inchoate state . . . To treat them as scientific rather than as philosophic is to conceal from view their hypothetical character and to freeze them into *rigid dogmas* [italics added] that hamper instead of assisting actual inquiry" (p. 55).

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